

What is claimed is:

1. A process for producing particulate water-soluble cellulose derivatives, comprising:

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- a) forming a feed composition comprising a cellulose derivative, and 50 wt. % to 80 wt. % of water, based on the total weight of the feed composition, wherein the cellulose derivative is at least one of swelled and dissolved in the feed composition;

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- b) contacting, in a high rotational speed gas jet impact mill, the feed composition with a superheated gas mixture selected from (i) a superheated gaseous mixture of steam and an inert gas, and (ii) a superheated gas mixture of steam and air, thereby converting the cellulose derivative of the feed composition into a solid state form of finely particulate particles, wherein the superheated gas mixture has a steam content of 40 wt. % to 99 wt. %, based on the total weight of the superheated gas mixture;

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- c) separating the particulate cellulose derivative from the superheated gas mixture; and

- d) optionally drying the particulate cellulose derivative.

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2. The process of Claim 1 wherein the cellulose derivative is present in said feed composition in an amount of 20 wt. % to 50 wt. %, based on the total weight of the feed composition.

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3. The process of Claim 1 wherein at least one of modifiers, additives and active substances are mixed with or added to the cellulose derivative before, during or after one or more of the partial steps a) to c) of the process.

4. The process of Claim 1 wherein that the cellulose derivative is a cellulose derivative having a thermal flocculation point.
5. The process of Claim 1 wherein the cellulose derivative used to form the feed composition is in the form of a water-moist filter cake, and the water used to form the feed composition has a temperature of from 0° to 60°C.
6. The process of Claim 1 wherein the cellulose derivative is a cellulose ether.
7. The process of Claim 1 wherein a sieve-free high rotational speed gas jet impact mill is used in step b).
8. The process of Claim 1 wherein the particle-size distribution curve of the finely particulate cellulose derivative is adjusted in step b) by varying the rotational speed of the high rotational speed gas jet impact mill.
9. The particulate cellulose derivative prepared according to the process of Claim 1 wherein it contains, in each case based on the total weight of the particles, less than 5 wt. % of particles with a particle size smaller than 15 μ m, less than 2 wt. % of particle size smaller than 10 μ m and less than 1 wt. % of particle size smaller than 5 μ m.
10. The particulate cellulose derivative prepared according to the process of Claim 1 wherein it contains, in each case based on the total weight of the particles, less than 20 wt. % of particles with a particle size smaller than 15 μ m, less than 10 wt. % of particle size smaller than 10 μ m and less than 2 wt. % of particle size smaller than 5 μ m.
11. The particulate cellulose derivative prepared according to the process of Claim 1 wherein it has a particle-size distribution curve and wt. % cumulative

sieving limits, as determined by means of sieving with a set of sieves, selected from the group consisting of:

Particle-size distribution curve A

wt. % cumulative sieving

< 0.25 mm 98.5 - 100

< 0.2 mm 95 - 100

< 0.16 mm 89 - 98

< 0.125 mm 79 - 92

< 0.1 mm 65 - 80

< 0.063 mm 35 - 45;

Particle-size distribution curve B

wt. % cumulative sieving

< 0.25 mm 99 - 100

< 0.2 mm 98 - 100

< 0.16 mm 93 - 100

< 0.125 mm 85 - 94.5

< 0.1 mm 75 - 88

< 0.063 mm 45 - 55;

Particle-size distribution curve C

wt. % cumulative sieving

< 0.25 mm 99 - 100

< 0.2 mm 98.5 - 100

< 0.16 mm 95.5 - 100

< 0.125 mm 89 - 96.5

< 0.1 mm 81 - 91.5

< 0.063 mm 55 - 65;

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Particle-size distribution curve D

wt. % cumulative sieving

< 0.25 mm 99.5 - 100

< 0.2 mm 99.0 - 100

< 0.16 mm 97.0 - 100

< 0.125 mm 93 - 98

< 0.1 mm 86 - 94.5

< 0.063 mm 65 - 75;

Particle-size distribution curve E

wt. % cumulative sieving

< 0.25 mm 99.9 - 100

< 0.2 mm 99.5 - 100

< 0.16 mm 97.5 - 100

< 0.125 mm 95.5 - 99.5

< 0.1 mm 91 - 97

< 0.063 mm 75 - 85;

and

Particle-size distribution curve F

wt. % cumulative sieving

< 0.25 mm 99.9 - 100

< 0.2 mm 99.5 - 100

< 0.16 mm 98.5 - 100

< 0.125 mm 96.5 - 99.9

< 0.1 mm 94 - 99.5

< 0.063 mm 85 - 95.

12. The particulate cellulose derivative of Claim 9 wherein it is a cellulose derivative selected from the group consisting of methyl cellulose, methylhydroxyethyl cellulose, methylhydroxypropyl cellulose, methylhydroxypropylhydroxyethyl cellulose and mixtures thereof.

13. A method of using the particulate cellulose derivative of Claim 9 as a thickener, binder or coating agent, in colouring agents, pharmaceuticals, cosmetics or foodstuffs.
14. A method of using the particulate cellulose derivative of Claim 9 as a protective colloid.

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